Claims

What is claimed is:

1. A chimeric molecule comprised of the GD3 binding domain of antibody MB3.6, with variable gene sequences as specified in Fig.4A-C, as a single chain antibody with a (GGSGS)3 linker, the zeta signaling chain of the T cell receptor and an intervening CD8α hinge in which the cysteine residues have been mutated.

2. A chimeric molecule comprised of the PSMA binding domain of antibody 3D8, with variable gene sequences as specified in Fig.4D&E, as a single chain antibody with a (GGSGS)3 linker, the zeta signaling chain of the T cell receptor and an intervening CD8α hinge in which the cysteine residues have been mutated.

3. A chimeric molecule comprised of the PSMA binding domain of antibody 4D4, with variable gene sequences as specified in Fig.4F&G, as a single chain antibody with a (GGSGS)3 linker, the zeta signaling chain of the T cell receptor and an intervening CD8α hinge in which the cysteine residues have been mutated.

4. A chimeric molecule comprised of the PSMA binding domain of antibody 3E11, with variable gene sequences as specified in Fig.4H&I, as a single chain antibody with a (GGSGS)3 linker, the zeta signaling chain of the T cell receptor and an intervening CD8α hinge in which the cysteine residues have been mutated.

5. Molecules of claim 1-4 in which other signaling chains of T cells or other cell types are substituted, or in which a different hinge molecule or no hinge molecule is substituted, or a combination thereof.

6. Molecules of claim 1-5 in which at least one of the CDRs of the heavy chain and one of the CDRs of the light chain are preserved in a form (e.g., sFv or Fab) that maintains the binding